

WHAT IS CLAIMED IS:

*Swj A6*

1. A device search system comprising a server unit for controlling a database in which information for identifying a device on a network and information for various attributes of the device are registered and for executing the search of the device in accordance with a search request, and a client unit for outputting the search request to the server unit, said client unit comprising:

10 first generation means for generating a first condition designating one or more attributes in order to search a desired device on the network,

15 second generation means for extracting a certain attribute from the first condition to generate a second condition,

search means for requesting the server unit to search in accordance with the second condition to obtain the information for a device matching the second condition as a result of the above search,

20 first control means for sorting and outputting only the information for the device matching the first condition as first result information in accordance with the obtained search result, and

25 second control means for outputting the information for the device matching the second condition as second result information in accordance with the obtained search result and the information

showing presence or absence of each attribute  
designated by the first condition for each device.

2. The device search system according to claim 1,  
5 wherein

device attributes controlled by the database  
include an indispensable attribute to be registered  
whenever a device is registered in the database and  
attributes other than the indispensable attribute, and  
10 the second generation means extracts only the  
indispensable attribute from attributes designated by  
the first condition to generate the second condition.

*Sub A1* 3. The device search system according to claim 2,  
15 wherein the client unit further comprises;

third control means for selectively outputting the  
first result information or the second result  
information in accordance with a predetermined  
condition.

20 4. The device search system according to claim 3,  
wherein

the third control means outputs the first result  
information when a device to be output as the first  
25 result information is present and outputs the second  
result information when a device to be output as the  
first result information is not present.

5. The device search system according to claim 2,  
wherein

the client unit further comprises storage means  
for storing symbol information corresponding to an  
5 attribute which can be designated by the first  
condition, and

when the second result information is output and  
when the information showing presence or absence of  
each attribute designated by the first condition  
10 output, presence or absence of each attribute is shown  
in accordance with a display mode of the symbol  
information corresponding to each attribute.

6. A system including a client unit for  
15 requesting search of a device on a network and a server  
unit for executing search of the device in accordance  
with a search request from the client unit, wherein the  
server unit comprises;

control means for controlling a database in which  
20 the information for identifying a device on the network  
and the information for various attributes of the  
device are registered,

reception means for receiving a first condition  
designating one or more attributes in order to search a  
25 desired device on the network from the client unit,

generation means for extracting a certain  
attribute from the first condition and generating a

second condition,

first search means for searching a device matching the first condition from the database and outputting first result information, and

5 second search means for searching a device

matching the second condition from the database and outputting second result information.

7. The system according to claim 6, wherein

10 attributes of a device controlled by the database include an indispensable attribute registered whenever a device is registered in the database and attributes other than the indispensable attribute, and

15 the generation means extracts only the indispensable attribute designated by the first condition and generates the second condition.

8. The system according to claim 7, wherein

the server unit further comprises;

20 control means for selecting the first result information or the second result information in accordance with a predetermined condition and returning the information to the client unit.

25 9. The system according to claim 8, wherein

the control means returns the first result information to the client unit when a device to be

output as the first result information is present and returns the second result information to the client unit when the device to be output as the first result information is not present.

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*Subj: A* 10. A device search system for requesting a server unit for controlling a database in which information for identifying a device on a network and information for various attributes of the device are 10 registered to search the device and processing a search result, comprising:

first generation means for generating a first condition designating one or more attributes in order to search a desired device on the network;

15 second generation means for extracting a certain attribute from the first condition and generating a second condition;

20 search means for outputting a search request to the server unit in accordance with the second condition and obtaining information for a device matching the second condition as a search result;

25 first control means for sorting and outputting information for only a device matching the first condition as first result information in accordance with the obtained search result; and

second control means for outputting information for a device matching the second condition and

information showing presence or absence of each attribute designated by the first condition for each device.

5           11. The device search system according to claim  
10, wherein

10           attributes of a device controlled by the database include an indispensable attribute registered whenever a device is registered in the database and attributes other than the indispensable attribute, and

15           the second generation means extracts only the indispensable attribute from attributes designated by the first condition and generates the second condition.

15           12. The device search system according to claim  
11, further comprising:

20           third control means for selectively outputting the first result information or the second result information in accordance with a predetermined condition.

12, wherein

25           the third control means outputs the first result information when a device to be output as the first result information is present and outputs the second result information when the device to be output as the

first result information is not present.

14. The device search system according to claim 11, further comprising:

5 storage means for storing symbol information corresponding to an attribute which can be designated by the first condition, wherein

when the second result information is output and when information showing presence or absence of each 10 attribute designated by the first condition is output, presence or absence of each attribute is shown in accordance with a display mode of the symbol information corresponding to each attribute.

15 15. A device search system for executing device search in accordance with a search request from a client unit for requesting search of a device on a network, comprising:

control means for controlling a database in which 20 information for identifying the device on the network and information for various attributes of the device are registered;

reception means for receiving a first condition designating one or more attributes in order to search a 25 desired device on the network from the client unit;

generation means for extracting a certain attribute from the first condition and generating a

second condition;

first search means for searching a device matching the first condition out of the database and outputting first result information; and

5 second search means for searching a device matching the second condition from the database and outputting second result information.

16. The device search system according to claim  
10 15, wherein

attributes of a device controlled by the database include an indispensable attribute registered whenever a device is registered in the database and attributes other than the indispensable attribute, and

15 the generation means extracts only the indispensable attribute from attributes designated by the first condition and generating the second condition.

20 17. The device search system according to claim  
16, further comprising:

control means for selecting the first result information or the second result information in accordance with a predetermined condition.

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18. The device search system according to claim  
17, wherein

the control means returns the first result information to the client unit when a device to be output as the first result information is present and returns the second result information to the client unit when a device to be output as the first result information is not present.

19. A device search method for requesting a server unit for controlling a database in which information for identifying a device on a network and information for various attributes of the device are registered to search a device and processing a result of the search, comprising the steps of:

generating a first condition designating one or more attributes in order to search a desired device on the network;

extracting a certain attribute from the first condition and generating a second condition;

requesting the server unit to perform search in accordance with the second condition and obtaining information for a device matching the second condition as a result of the search;

sorting and outputting only information for a device matching the first condition as first result information in accordance with the obtained search result; and

outputting the information for the device matching

the second condition and information showing presence or absence of each attribute designated by the first condition for each device.

5           20. The device search method according to claim 19, wherein

10           attributes of a device controlled by the database include an indispensable attribute registered whenever a device is registered in the database and attributes other than the indispensable attribute, and

15           only the indispensable attribute is extracted from attributes designated by the first condition when the second condition is generated.

20           21. The device search method according to claim 20, further comprising the step of:

25           selective outputting the first result information or the second result information in accordance with a predetermined condition.

20           22. The device search method according to claim 21, wherein

25           the first result information is output when a device to be output as the first result information is present and the second result information is output when the device to be output as the first result information is not present.

23. The device search method according to claim  
20, further comprising the step of:

controlling symbol information corresponding to an  
attribute which can be designated by the second result  
5 information, wherein

when the second result information is output and  
when information showing presence or absence of each  
attribute designated by the first condition is output,  
presence or absence of each attribute is shown in  
10 accordance with a display mode of symbol information  
corresponding to each attribute.

24. A device search method for searching a device  
in accordance with a search request from a client unit  
15 for requesting search of a device on a network,  
comprising the steps of:

controlling a database in which information for  
identifying a device on the network and information for  
various attributes of the device are registered;

20 receiving a first condition designating one or  
more attributes in order to search a desired device on  
the network from the client unit;

extracting a certain attribute from the first  
condition and generating a second condition;

25 searching a device matching the first condition  
from the database and outputting first result  
information; and

searching a device matching the second condition  
and outputting second result information.

25. The device search method according to claim  
5 24, wherein

attributes of a device controlled by the database  
include an indispensable attribute registered whenever  
a device is registered in the database and attributes  
other than the indispensable attribute, and

10 only the indispensable attribute is extracted from  
attributes designated by the first condition when the  
second condition is generated.

26. The device search method according to claim  
15 25, further comprising the step of:

the first result information or the second result  
information is selected in accordance with a  
predetermined condition and returned to the client  
unit.

20 27. The device search method according to claim  
26, wherein

the first result information is returned to the  
client unit when a device to be output as the first  
25 result information is present, and

the second result information is returned to the  
client unit when the device to be output as the first

result information is not present.

28. A storage medium storing a computer program to be executed by a computer of a device search system 5 for requesting a server unit for controlling a database in which information for identifying a device on a network and information for various attributes of the device are registered to search a device and processing a result of the search, wherein the program comprises 10 the steps of;

generating a first condition designating one or more attributes in order to search a desired device on the network;

15 extracting a certain attribute from the first condition and generating a second condition;

requesting server unit to perform search in accordance with the second condition and obtaining information for a device matching the second condition as a result of the search;

20 sorting and outputting only information for a device matching the first condition as first result information in accordance with the obtained search result; and

25 outputting information for the device matching the second condition as second result information and information showing presence or absence of each attribute designated by the first condition for each

device in accordance with the obtained search result.

29. The storage medium according to claim 28,  
wherein

5 attributes of a device controlled by the database  
include an indispensable attribute registered whenever  
a device is registered in the database and attributes  
other than the indispensable attribute, and

10 only the indispensable attribute is extracted from  
attributes designated by the first condition when the  
second condition is generated.

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A* 30. The storage medium according to claim 29,  
wherein the computer program further comprises the step  
15 of;

selectively outputting the first result  
information or the second result information in  
accordance with a predetermined condition.

20 31. The storage medium according to claim 30,  
wherein the first result information is output when a  
device to be output as the first result information is  
present, and

25 the second result information is output when the  
device to be output as the first result information is  
not present.

32. The storage medium according to claim 29,  
wherein the computer program further comprises;  
controlling symbol information corresponding to an  
attribute which can be designated by the first  
5 condition, and  
to output the second result information and  
information showing presence or absence of each  
attribute designated by the first condition, presence  
or absence of each attribute is shown in accordance  
10 with a display mode of symbol information corresponding  
to each attribute.

33. A storage medium storing a computer program  
to be executed by a computer of a device search system  
15 for executing search of a device in accordance with a  
search request from a client unit for requesting search  
of a device on a network, wherein the computer program  
comprises the steps of;  
controlling a database in which information for  
20 identifying a device on the network and information for  
various attributes of the device,  
receiving a first condition designating one or  
more attributes in order to search a desired device on  
the network from the client unit,  
25 extracting a certain attribute from the first  
condition and generating a second condition,  
searching a device matching the first condition

from the database and generating first result information, and

searching a device matching the second condition from the database and generating second result information.

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34. The storage medium according to claim 33,

wherein

10 attributes of a device controlled by the database include an indispensable attribute registered whenever a device is registered in the database and attributes other than the indispensable attribute, and

15 only the indispensable attribute is extracted from attributes designed by the first condition when the second condition is generated.

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35. The storage medium according to claim 34,

wherein the computer program further comprises the step of;

20 selecting the first result information or the second result information in accordance with a predetermined condition and returning the information to the client unit.

25 36. The storage medium according to claim 35,

wherein

the first result information is returned to the

client unit when a device to be output as the first  
result information is present, and

the second result information is returned to the  
client unit when the device to be output as the first  
5 result information is not present.

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